



Please type a plus sign (+) inside this box → ☐

PTO/SB/08A (08-00)  
Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/614,335
		Filing Date	July 7, 2003
		First Named Inventor	Keeler et al.
		Group Art Unit	2121
		Examiner Name	George B. Davis
Sheet 1	of 4	Attorney Docket Number	PAVI-26,470

U.S. PATENT DOCUMENTS						
Examiner Initials <sup>*</sup>	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
C.D.	1	4,802,103		Faggin et al.	01/1989	
	2	4,813,077		Woods et al.	03/1989	
	3	4,872,122		Altschuler et al.	01/1989	
	4	4,910,691		Skeirik	03/1990	
	5	4,965,742		Skeirik	10/1990	
	6	5,006,992		Skeirik	04/1991	
	7	5,052,043		Gaborski	09/1991	
	8	5,081,651		Kubo	01/1992	
	9	5,111,531		Grayson et al.	05/1992	
	10	5,113,483		Keeler et al.	05/1992	
	11	5,121,467		Skeirik	06/1992	
	12	5,140,523		Frankel et al.	08/1992	
	13	5,150,313		van den Engh et al.	09/1992	
	14	5,175,797		Funabashi et al.	12/1992	
	15	5,255,347		Matsuba et al.	10/1993	
	16	5,276,771		Manukian et al.	01/1994	
	17	5,335,291		Kramer et al.	08/1994	
	18	5,353,207		Keeler et al.	10/1994	
	19	5,402,519		Inoue et al.	03/1995	
C.D.	20	5,444,820		Tzes et al.	08/1995	

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>3</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
C.D.	1	EP	0262647	A3	Toshiba	04-06-1988		
C.D.	2	EP	0327268	A2	AT&T	08-09-1989		
C.D.	3	EP	0436916	A2	Motorola Inc.	07-17-1991		
C.D.	4	WO	94/17489		Pavilion Technologies, Inc.	08-04-1994		
C.D.	5	WO	94/12948		Pavilion Technologies, Inc.	06-09-1994		
C.D.	6	WO	94/17482		Pavilion Technologies, Inc.	08-04-1994		

Examiner Signature	George Davis	Date Considered	7/6/05
-----------------------	--------------	--------------------	--------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

+

+

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>			<b>Complete if Known</b>		
			Application Number	10/614,335	
			Filing Date	July 7, 2003	
			First Named Inventor	Keeler et al.	
			Group Art Unit	2121	
			Examiner Name	George B. Davis	
Sheet	2	of	4	Attorney Docket Number	PAVI-26,470

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
6-2	21	5,461,699		Arababi et al.	10/1995	
6-7	22	5,467,428		Ulug	11/1995	
6-8	23	5,479,573		Keeler et al.	12/1995	
6-8	24	5,559,690		Keeler et al.	09/1996	
6-8	25	5,581,459		Enbutsu et al.	12/1996	
6-8	26	5,613,041		Keeler et al.	03/1997	
6-8	27	5,659,667		Buescher et al.	08/1997	
6-8	28	5,704,011		Hensen et al.	12/1997	
6-8	29	5,720,003		Chiang et al.	02/1998	
6-8	30	5,729,661		Keeler et al.	03/1998	
6-8	31	5,819,006		Keeler et al.	10/1998	
6-8	32	6,002,839		Keeler et al.	12/1999	
6-8	33	6,169,980		Keeler et al.	01/2001	
6-8	34	6,314,414		Keeler et al.	11/2001	
6-8	35	6,613,041		Keeler et al.	03/1997	
6-8	36	6,591,254		Keeler et al.	07/08/2003	

[illegible]

Examiner Signature	George Davis	Date Considered	3/6/05
-----------------------	--------------	--------------------	--------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**

Please type a plus sign (+) inside this box → ☐

PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/614,335
		Filing Date	July 7, 2003
		First Named Inventor	Keeler et al.
		Group Art Unit	2121
		Examiner Name	George B. Davis
		Attorney Docket Number	PAVI-26;470
Sheet	3	of	4

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
GD	1	PHOHA, SHASHI; "Using the National Information Infrastructure (NII) for Monitoring, Diagnostics and Prognostics of Operating Machinery," IEEE Proceedings of the 35th Conference on Decision and Control, Kobe, Japan, pp. 2583-2587, Dec. 1996.	
GD	2	HARTMAN, ERIC J., KEELER JAMES D., KOWALSKI, JACEK M.; "Layered Neural Networks with Gaussian Hidden Units as Universal Approximations," Neural Computation 2, 1990, Massachusetts Institute of Technology, pp. 210-215.	
GD	3	HARTMAN, ERIC, KEELER, JAMES D.; "Predicting the Future: Advantages of Semilocal Units," Neural Computation 3, 1991, Massachusetts Institute of Technology, pp. 566-578.	
GD	4	PRESS, WILLIAM H., FLANNERY, BRIAN P., TEUKOLSKY, SAUL A., VETTERLING, WILLIAM T.; Numerical Recipes: The Art of Scientific Computing, 1986, ch. 3, "Interpolation and Extrapolation," pp. 77-101.	
GD	5	SERTH, R.W., HEENAN, W. A.; "Gross Error Detection and Data Reconciliation in Steam-Metering Systems," AIChE Journal, vol. 32, No. 5, May 1986, pp. 733-742.	
GD	6	MYUNG-SUB ROH et al.; Thermal Power Prediction of Nuclear Power Plant Using Neural Network and Parity Space Model, IEEE Transactions on Nuclear Science, vol. 38, no. 2, Apr. 1991, pp. 866-72.	
GD	7	AUTERE, ANTTI; On Correcting Systematic Errors Without Analyzing Them by Performing a Repetitive Task, IEEE / RSJ International Workshop on Intelligent Robots and Systems IROS '91, Nov. 3-5, 1991, pp. 472-7.	
GD	8	KIMOTO, TAKASHI et al.; Stock Market Prediction System with Modular Neural Networks, IEEE, Jun. 1990, pp. I-1 to I-6.	
GD	9	DORRONSORO ET AL.; "Neural Fraud Detection in Credit Card Operations," IEEE Transactions on Neural Networks, VOL. 8, NO. 4, Jul. 1997, PP. 827-34.	

Examiner Signature	George Davis	Date Considered	3/6/05
--------------------	--------------	-----------------	--------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box → ☐

PTO/SB/08B (08-00)  
Approved for use through 10/31/2002. OMB 0651-0031  
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/614,335
		Filing Date	July 7, 2003
		First Named Inventor	Keeler et al.
		Group Art Unit	2121
		Examiner Name	George B. Davis
Sheet 4	of 4	Attorney Docket Number	PAVI-26,470

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials <sup>*</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
G-I	10	SPENCELEY, S.E., WARREN, J.R.; "The Intelligent Interface for Online Electronic Medical Records Using Temporal Data Mining," IEEE Xplore, Proceedings of the 31st Annual Hawaii, International Conference on System Sciences. Jan. 1998, pp. 266-745.	
G-I	11	KOUTSOUGERAS; "A feedforward neural network classifier model: multiple classes, confidence output values, and implementation," International Journal of Pattern Recognition and Artificial Intelligence Ed. World Scientific Publishing Co., October 1992, vol. 6, no. 4, pp. 539-569.	
G-I	12	LAPEDES, ALAN, FARBER, ROBERT; "How Neural Nets Work," American Inst. of Physics, 1988, pp. 442-457.	
G-I	13	WEIGEND, ANDREAS S., HUBERMAN, BERNARDO A., RUMELHART, DAVID E; "Predicting the Future: A Connectinist Approach," Stanford University, Stanford-PDP-90-01/PARC-SSL-90-20, Apr. 1990.	
G-I	14	RUMELHART, D.E., HINTON, G.E., WILLIAMS, R.J.; "Learning Internal Representations by error Propagation," Parallel Distributed Processing, vol. 1, 1986.	
G-I	15	RANDER, P.W., UNNIKRISHNAN, K.P.; "Learning the Time-Delay Characteristics in a Neural Network," ICAAADDP-92-IEEE International Conference on Acoustics, Speech and Signal Processing, Mar. 23, 1992, vol. 2, pp. 285-288.	
G-I	16	TAM, DAVID C., PERKEL, DONALD H.; "A Model for Temporal Correlation of biological Neuronal Spike Trains," IJCNN Int. Joint Conference of Neural Networks, Dept. of Physiology and Biophysics, University of California, pp. 1-781 - 1-786.	
G-I	17	LEVIN, ESTHER, GEWIRTZMAN, RAANAN, INBAR, GIDEON F.; "Neural Network Architecture for Adaptive System Modeling and Control," Neural Networks, 4(1991) No. 2, pp. 185-191.	
G-I	18	TROUDET, T., GARG, S., MATTERN, D. MERRILL, W.; "Towards Practical Control Design Using Neural Computation," ICJNN-91-Seattle-International Joint Conference on Neural Networks, vol. 2, pp. 675-681, Jul 8, 1991.	
G-I	19	BEERHOLD, J.R., JANSEN, M., ECKMILLER, R.; "Pulse-Processing Neural Net Hardware with Selectable Topology and Adaptive Weights and Delays," IJCNN International Joint Conference on Neural Networks, Jun. 17, 1990, vol. 2, pp. 569-574.	
G-I	20	HAFFNER, PATRICK, FRANZINI, MICHAEL, WAIBEL, ALEX; "Integrating Time Alignment and Neural Networks for High performance Continuous Speech Recognition," ICASSP 91, sponsored by The Inst. of electrical and Electronics Engineers, Signal Processing Society, 1991 Int. Conf. on Acoustics, Speech and Signal Processing, May 14-17, 1991, pp. 105-108.	

Examiner Signature	George Davis	Date Considered	3/6/05
--------------------	--------------	-----------------	--------

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.